

Standard

When the admissibility of expert testimony is challenged, the district court must make “a preliminary determination of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.” *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 592-93 (1993). The party seeking to introduce the expert’s testimony bears the burden of establishing its admissibility by a preponderance of the evidence. *Lauzon v. Senco Products, Inc.*, 270 F.3d 681, 686 (8th Cir. 2001). Under Federal Rule of Evidence (“FRE”) 702, a witness may give an expert opinion if the following conditions are met:

(a) the expert’s scientific, technical or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

In other words, the proponent must show that the expert’s opinions are relevant, the expert is qualified to offer them, and “the methodology underlying his conclusions is scientifically valid.” *Marmo v. Tyson Fresh Meats, Inc.*, 457 F.3d 748, 757-58 (8th Cir. 2006). Doubts should be resolved in favor of admissibility. *Id.* at 758.

Analysis

I. Dr. Gilbert’s testimony is admissible under FRE 702.

Dr. Kathleen Gilbert, Ph.D., is an immunologist and immunotoxicologist who began conducting extensive research into the relationship between TCE and autoimmune disease long before Plaintiff retained her for purposes of this litigation. In fact, this litigation is the first in which she has appeared as an expert witness. In her report, Dr. Gilbert opines that: (1) TCE can cause AIH in humans; (2) the development of autoimmune disease, including AIH, requires an

environmental trigger that may be more effective in individuals with a genetic predisposition for autoimmunity; (3) it is more likely than not that TCE caused Plaintiff's AIH, and that her AIH is not idiopathic; and (4) the TCE exposure in the area of the Newton County Wells Superfund Site was sufficient to damage human health. Gilbert Rep. (Doc. 170-14) at 7, 17, 21, 25.

Defendants seek to exclude her testimony, arguing that: (1) she is not qualified to assert her key opinions; (2) she did not reliably apply her methodology to the facts of this case; (3) she did not reliably evaluate the question of general causation; and (4) she provided no reliable basis or methodology for her opinion that TCE specifically caused Plaintiff's AIH. The Court is not persuaded by these arguments.

First, Dr. Gilbert qualifies as an expert in the topics on which she will testify. Defendants claim she is not because she is unable to diagnose AIH in humans or mice, she has never treated a patient with AIH, she did not review Plaintiff's medical records, and she is not an epidemiologist or pathologist. Although Dr. Gilbert is not a medical doctor and did not diagnosis or treat Plaintiff's AIH, she has solid academic credentials that qualifies her to testify about what likely caused Plaintiff's AIH. Dr. Gilbert holds a B.S. in Biology and a Ph.D. in immunology. She is a member of the American Association of Immunologists, the British Society of Immunologists, and the Society of Toxicology. She is a full professor at the University of Arkansas Medical School, where she has taught in the Pediatrics and Pharmacology and Toxicology departments for approximately twenty years. She teaches medical students immunology, and she teaches graduate level courses in advanced Immunology, Molecular Mechanisms of Immunology and Molecular & Translational Toxicology. She is also the course director for the Immunology Department, and she developed the school's curriculum on immunotoxicology. She has published numerous peer-reviewed papers on TCE and AIH, and

served as a peer-reviewer for more than twenty journals related to immunology and toxicology. Hence, she is qualified to testify on the relationship between TCE and AIH in humans.

Second, Dr. Gilbert's methodology is not inherently flawed. Defendants assert her methodology is not reliable because she developed a hypothesis first and selectively assembled evidence to support it. They also suggest she failed to analyze all of the relevant literature and failed to conduct a sufficiently searching review for all of the applicable literature before rendering her opinion. After reviewing the applicable portions of her report and deposition, the Court finds no merit to this claim.

Third, the Court finds Dr. Gilbert sufficiently evaluated the question of general causation to present her opinion to the jury. Defendants raise six objections with respect to her general causation opinion. They complain that: (1) she is not qualified to render such an opinion because she was not the person who read the mice liver slides and diagnosed the mice in her studies with AIH; (2) other laboratories have not confirmed her findings that TCE causes AIH in the breed of immunocompromised mice used in her study; (3) her report failed to discuss the fact that TCE has not been shown to cause AIH in other species of animals; (4) she cannot say with "certainty" that the test results in the immunocompromised mice are relevant to humans; (5) her report failed to discuss or analyze whether humans exposed to significant doses of TCE in the workplace developed AIH; and (6) her report "does not address important literature in an influential journal that concludes mice are not valid predictors" of human inflammatory disease. Assuming for the sake of argument that there is some merit to these claims,¹ it may affect her credibility or the

¹ The Court will not discuss all of these claims, but notes that far from being the "fatal, show-stopping problem" Defendants suggests, Defendants' first argument is meritless. Defendants contend Dr. Gilbert should be prohibited from testifying that the TCE exposed mice in her studies developed AIH because she did not *personally* read the mice liver slides, instead having a pathologist colleague at her medical school review them. FRE 703 states that "an expert may base an opinion on facts or data in the case that the expert has been made aware of or personally observed" so long as experts in the particular field would reasonably rely on those kinds of facts or data in forming an opinion. Doctors and scientists routinely send tissue slides to pathologists for review because pathologists are

weight the jury gives her opinion, but it does not justify excluding her testimony. *See Miles v. Gen. Motors Corp.*, 262 F.3d 720, 724 (8th Cir. 2001) (holding that minor methodological deficiencies should be exposed during cross-examination, not excluded at the outset); *see also Russell v. Whirlpool Corp.*, 702 F.3d 450, 458 (8th Cir. 2012) (“The Supreme Court has emphasized the usual tools to expose flaws in evidence remain available: ‘Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.’” (quoting *Daubert*, 509 U.S. at 596)).

Fourth and finally, the Court finds Dr. Gilbert has proffered a reliable basis and methodology for her opinion that TCE specifically caused Plaintiff’s AIH. Defendants devote the last five pages of their brief to arguing that Dr. Gilbert’s report and deposition testimony does not sufficiently discuss the amount of TCE to which Plaintiff was allegedly exposed, or consider possible alternate causes for Plaintiff’s AIH. Contrary to Defendants’ suggestion, however, Dr. Gilbert’s opinion is not connected to the existing data merely by her own empty assertion. It relies on a significant amount of admissible evidence to posit that Plaintiff was exposed to a significant level of TCE both in utero and while growing up in Silver Creek, by ingesting, inhaling, and absorbing TCE through her skin. While Dr. Gilbert’s report does not estimate an exact level of exposure, it explains why such an estimate is not possible. It also provides a reliable basis for her opinion that Plaintiff’s exposure to TCE was such that, over time, acting on a genetic predisposition, it caused Plaintiff to develop AIH, and it was not idiopathic. It is well-established that a toxicologist may testify that exposure to a chemical caused a person’s injuries. *Marmo*, 457 F.3d at 758; *Bonner v. ISP Tech., Inc.*, 259 F.3d 924, 928-31 (8th Cir. 2001). An

specially trained and skilled at reading such slides. Hence the fact that Dr. Gilbert had a pathologist colleague view the slides and he diagnosed the mice with AIH does not discredit her methodology or disqualify her from rendering her opinion that TCE causes AIH.

expert's testimony should be admitted unless the opinion is so fundamentally unsupported that it can offer no assistance to the jury. *Id.* at 929-30. Defendants' points are grist for cross-examination, not grounds to exclude. Plaintiff has carried her burden of demonstrating admissibility.

II. Dr. Chiodo's testimony is admissible under FRE 702.

Dr. Ernest Chiodo, M.D., is a doctor board certified in internal medicine, occupational medicine, and public health and general preventive medicine, as well as a certified industrial hygienist. Dr. Chiodo offers four opinions: (1) Plaintiff was exposed to TCE, and the exposures included inhalation, ingestion, and dermal; (2) exposure to TCE is capable of causing AIH in humans; (3) exposure to TCE was the most likely cause of Plaintiff's AIH; and (4) as a result of her AIH, Plaintiff will suffer medical complications over her lifetime which will impact her employment as a registered nurse. Chiodo Rep. (Doc. 170-5) at 5-6. Defendants seek to exclude his testimony, arguing: (1) he is not qualified to offer, and has provided no reasonable basis for, his opinion that Plaintiff was exposed to TCE; (2) he has provided no reliable basis or methodology for his opinion that TCE can cause AIH in humans; (3) he has provided no reliable basis or methodology for his opinion that TCE specifically caused Plaintiff's AIH; and (4) his opinions about future complications Plaintiff may face are not reliable or relevant.

With respect to the first argument, the Court notes that while Dr. Chiodo cannot identify the exact locations where Plaintiff was exposed, he does not propose to testify about exact locations, only that she was exposed to TCE. The Court finds the government reports cited in Dr. Chiodo's expert report, the fact that Silver Creek is within the bounds of the Newton County Wells site, and Dr. Chiodo's background and experience in industrial hygiene—which involves quantifying and controlling occupational and environmental hazards, including chemicals such

as TCE—combine to provide a reliable basis for him to opine that Plaintiff was exposed to TCE in Silver Creek.

There is also a reliable basis and methodology for Dr. Chiodo's opinion that TCE can cause AIH in humans. Dr. Chiodo's report applies the Bradford-Hill considerations to this question and cites several peer-reviewed articles and studies, so it provides a reliable basis and methodology. Defendants' criticism of the underlying articles and studies and Dr. Chiodo's conclusion goes to the weight the jury should give his opinion, not its admissibility.

Further, there is a reliable basis and methodology for Dr. Chiodo's opinion that TCE caused Plaintiff's AIH. Dr. Chiodo used a differential diagnosis to determine that TCE exposure caused Plaintiff's AIH. A properly conducted differential diagnosis is presumptively admissible under *Daubert*. *Tedder v. Am. Railcar Industries, Inc.*, 739 F.3d 1104, 1108 (8th Cir. 2014). “[A] district court may exercise its gatekeeping function to exclude only those diagnoses that are scientifically invalid.” *Id.* (quoting *Glastetter v. Novartis Pharm. Corp.*, 252 F.3d 986, 989 (8th Cir. 2001) (per curiam)). When performing a differential diagnosis analysis, the expert must consider alternate causes, but is “not required to rule out all possible causes.” *Johnson v. Mead Johnson & Co.*, 754 F.3d 557, 563 (8th Cir. 2014). “[A] differential expert opinion can be reliable even with less than full information.” *Id.* at 564 (internal quotation omitted). Concerns that the expert may not have considered some relevant information goes to the weight the testimony should be given, not its admissibility. *Id.* Consequently, Defendants' complaints that Dr. Chiodo did not adequately consider Plaintiff's family history of autoimmune disease as an alternative cause, or whether the cause might be of unknown origin, are not grounds to exclude his testimony. As for Defendants' assertion that his opinion is fatally unreliable because he did not identify a precise level of TCE exposure necessary to cause AIH in humans, a plaintiff need

not provide “a mathematically precise table equating levels of exposure with levels of harm,” only “evidence from which a reasonable person could conclude” that the exposure “probably” caused the injury. *Bonner*, 259 F.3d at 928 (internal quotation omitted).

Finally, Dr. Chiodo’s report and deposition provide a reliable basis for his opinions concerning future medical complications Plaintiff may face and their probable consequences. For example, Dr. Chiodo is a board certified internist, he has extensive experience in occupational medicine, and he has worked with nurses for many years. This provides a reliable basis from which he can opine that Plaintiff will likely have a shortened work-life expectancy as a registered nurse because: (1) her chronic use of steroids from her teenage years onward will make her vulnerable to fractures, as evidenced by a fracture she has already suffered, which will make it difficult for her to work; (2) it is difficult for an immunocompromised individual to work in a health care setting, and Plaintiff’s already compromised immune system will be further damaged if she undergoes a liver transplant and has to take additional immunosuppressants; and (3) her AIH already causes her to experience malaise, fatigue, and arthralgias. Although Dr. Chiodo cannot guarantee Plaintiff will be unable to work past age 50, this does not make his testimony speculation. Defendants’ criticisms of his opinions go to the weight his testimony should receive, not its admissibility.

Thus, Plaintiff has shown all of Dr. Chiodo’s proposed testimony is admissible.

III. Dr. Parmet’s testimony is admissible under FRE 702.

Dr. Allen Parmet, M.D., is a doctor board certified in preventative medicine under the specialty of occupational medicine, which involves assessing health outcomes of environmental exposures and prevention of environmental injury and illness. Unlike most experts’ reports, Dr.

Parmet's report does not delineate each opinion and follow it with a specific discussion. Instead, under the heading of "Discussion," his report provides the following:

In reviewing the possible causation of Ms. Kirk's autoimmune hepatitis, I note that she has Type 1, and her autoantibodies are not disease specific. She was negative for the most common cause, by viral infections, specifically Hepatitis B and C as well as Epstein-Barr virus. She does not have genetic causation in the form of Wilson's disease or alpha-1-antitrypsin deficiency. The remaining etiologies are toxic exposures. Ms. Kirk was not prescribed drugs known to cause autoimmune hepatitis toxicity, namely alpha-methyldopa, nitrofurantoin or propylthiouracil. The only remaining possibilities are toxic environmental exposure and without that, unknown etiology.

Environmental Protection Agency studies demonstrate that Ms. Kirk was exposed to trichloroethylene in the water supply of her residence as a child. She *could have* absorbed TCE by inhalation, ingestion or transdermally. She has subsequently developed autoimmune hepatitis, which is strongly supported by medical evidence (Cooper et al. Evidence of autoimmune-related effects of trichloroethylene exposure from studies in mice and humans. Environmental Health Perspective 117:696-702. 2009)[;] Gilbert et al. Delineating liver events and trichloroethylene-induced autoimmune hepatitis. Chemical Research and Toxicology 22 (4): 626-32. 2009.[.].]

As a result of this condition, Ms. Kirk will require lifelong medical care with significant complications in her life expectancy and her ability to have a full and complete life, including bearing offspring. The full medical treatment must be ultimately defined by her treating gastroenterologist. Although additional supportive care including mental health and gynecological and other ancillary services may be involved.

Parmet Rep. (Doc. 196-1) at 15 (emphasis added). In his deposition, Dr. Parmet clarified that he believes Plaintiff was actually exposed to TCE, and that this exposure caused Plaintiff's AIH, thus the origin of her AIH is not unknown. Essentially, he embraces the findings of Plaintiff's treating doctors that she has AIH (an issue that does not appear to be in dispute), and then opines that based on his research, he believes Plaintiff's AIH was caused by exposure to TCE.

Defendants move to exclude Dr. Parmet's testimony, arguing: (1) he is not qualified to opine either on Plaintiff's medical condition or the possible causes of her AIH because he is not a liver or autoimmune disease specialist; (2) he has not provided a reliable basis or methodology for his opinion that TCE is capable of causing AIH in humans; and (3) he has not provided a reliable basis or methodology for his opinion that TCE specifically caused Plaintiff's AIH.

In addition to being a board certified doctor in occupational medicine, Dr. Parmet's qualifications include a masters degree in public health as well as extensive training in toxicology² and epidemiology. He also has practical experience managing human exposure to TCE. He has been employed as a consultant to oversee the health of workers in degreasing facilities using large volumes of TCE. He has also published articles and book chapters, although none appear to be peer-reviewed, and he has given presentations in the disciplines of environmental, occupational, and preventative medicine. Although a close question, given Dr. Parmet's qualifications his lack of specialization in liver and autoimmune diseases specifically goes to the weight his testimony should be given, not its admissibility.

The Court comes to the same conclusion with respect to Defendants' second and third arguments. Defendants' complaints about the basis and methodology for Dr. Parmet's opinions on general and specific causation are similar to those raised with respect to Plaintiff's other experts: His review of existing literature before formulating his opinion was flawed and inadequate; he has not identified a dose at which TCE allegedly causes AIH in humans; he was insufficiently rigorous in "ruling out" other potential causes of Plaintiff's AIH; he did not identify the amount or duration of Plaintiff's alleged TCE exposure; etc. Again, these concerns go to the weight of his opinion, not its admissibility. While these arguments may have more

² He has completed his course work for a Ph.D. in toxicology, but he cannot have thesis work reviewed until the Air Force declassifies it in 2027.

traction with respect to Dr. Parmet's qualifications and methodology—his qualifications, report, and reasoning are arguably not as impressive as other expert witnesses in this case—Plaintiff has nonetheless established his testimony is admissible. *See Johnson*, 754 F.3d at 562 (“As long as the expert’s scientific testimony rests upon good grounds, based on what is known it should be tested by the adversary process with competing expert testimony and cross-examination, rather than excluded by the court at the outset.” (internal quotation marks omitted)). Accordingly, the Court will not substitute its assessment of his opinion for the jury’s by resolving doubts about its correctness in favor of exclusion. *See id.*

IV. Dr. Zizic’s report is untimely, but the late disclosure was harmless, and his testimony is admissible under FRE 702.

Dr. Thomas Zizic is an Associate Professor of Medicine at Johns Hopkins School of Medicine and he maintains an active private practice in rheumatology. Defendants move to strike his report as a sanction under Rule 37(c) for its untimely disclosure, or, alternately, to exclude his testimony on the grounds that he is not qualified to render certain opinions, and he has not provided any reasonable basis or methodology for his opinions.

A. The report should not be stricken.

Defendants now move to strike Dr. Zizic’s opinion under Rules 26 and 37(c). The Court assumes without deciding that Defendants are correct that Dr. Zizic’s opinion was untimely disclosed. A party that fails to timely identify an expert witness is not allowed to use that witness to supply evidence unless the failure was “substantially justified or is harmless.” Fed. R. Civ. P. 37(c)(1). Defendants make a variety of arguments that they have been harmed, claiming: (1) that the late disclosure did not give Defendants adequate time to prepare for Dr. Zizic’s deposition; (2) that it will leave defense counsel unable to complete all of their pre-trial tasks without adding additional attorneys at considerable expense; and (3) that allowing him to testify

as a sur-rebuttal expert will disrupt the appropriate order of evidence at trial, forcing Defendants to re-call various out-of-town witnesses and risking confusing the jury.³

The Court is not convinced. First, Defendants had ample time to prepare for Dr. Zizic's deposition despite the late disclosure, as both the deposition transcript and Defendant's detailed briefing in the motion to exclude under FRE 702 demonstrate. Second, because the Court subsequently postponed the trial for its own scheduling needs after Defendants filed the motion to strike, Defendants will have plenty of time to complete all pre-trial tasks without having to add new attorneys to their trial team. Finally, any concerns Defendants have about disrupting the order of evidence at trial or having to re-call out-of-town witnesses to accommodate Dr. Zizic's testimony can be addressed in a pre-trial motion to fix the order in which the parties present their witnesses' testimony.

Accordingly, assuming Dr. Zizic's report was untimely disclosed, the Court finds Plaintiff's late disclosure was harmless, so Dr. Zizic's testimony should not be stricken.

B. Dr. Zizic's testimony is admissible under FRE 702.

The second portion of Defendant's motion argues Dr. Zizic's report should be excluded under FRE 702. Defendants contend he is not qualified to offer an opinion that Plaintiff was exposed to TCE or to discuss cancer risk, and that he has failed to provide a reliable basis or methodology for his opinions that Plaintiff was exposed to TCE, that TCE can cause AIH, or that TCE caused Plaintiff's AIH.

Dr. Zizic is qualified to offer an opinion that Plaintiff was exposed to TCE. Dr. Zizic is an Associate Professor of Medicine at Johns Hopkins School of Medicine and he maintains an

³ Defendants also claim that Dr. Zizic's testimony is needlessly duplicative of Plaintiff's other experts, and that his report clouds Plaintiff's position with alternative theories. Even if true, these harms are not caused by the untimely disclosure of his report. That is, Defendants would face these problems even if his report were timely disclosed, thus they are not justifications to sanction Plaintiff under Rule 37(c).

active private practice in rheumatology. His primary expertise is in immunology, but his background, training, and experience qualify him as an expert in rheumatology, toxicology, pharmacology, and epidemiology. He has published extensively in peer-reviewed journals and authored several dozen chapters in medical textbooks. He is also experienced in treating and diagnosing patients with AIH through his work at Johns Hopkins. He has also written, but not published, a book about water pollution and TCE. This training, study, and experience, in conjunction with the various government investigations and reports he has cited, which he could rely on under FRE 703, demonstrate he is qualified to offer the opinions in his report.

The Court finds no merit to Defendants' remaining objections concerning the basis or methodology for his opinions. Defendants' objections here are similar to those raised with respect to Drs. Gilbert's, Chiodo's, and Parmet's expert testimony: Dr. Zizic has failed to identify any specific locations where Plaintiff was allegedly exposed to TCE; he cannot show that the results of the various animal studies he relies on are relevant to humans; he did not sufficiently consider other causes for Plaintiff's AIH; etc. The Court's analysis of these objections is the same as with respect to the other experts. These arguments go to the weight of the testimony, not its admissibility.

V. Drs. Everett and Wells' report is timely, and their testimony is admissible.

Drs. Lorne Everett, Ph.D., D.Sc., and James T. Wells, Ph.D., PG, are hydrologists who opine that Plaintiff was exposed to TCE and that the amount of her exposure or dose was at least 5 µg/L.⁴ They disclosed two reports—one before the initial expert designation deadline and another at the rebuttal expert designation deadline—which purportedly rebut the expert report of Defendant's retained hydrologist, Wayne Weber. Defendants move to: (1) strike the rebuttal report on the grounds that it contains untimely disclosed case-in-chief opinions; (2) strike Dr.

⁴ The symbol "µg/L" means micrograms per liter.

Wells' testimony concerning numerous exhibits he created shortly before his depositions but not disclosed to Defendants until the depositions; and (3) move to exclude all of Drs. Everett and Wells' opinions under FRE 702 on the grounds that they are based on insufficient data and are insufficiently reliable or helpful to be admissible.

A. The rebuttal report does not untimely disclose case-in-chief opinions.

Defendants object to a section of the doctors' rebuttal report, ENVIRON's Groundwater Modeling," which discusses a computer model generated by a computer program, BIOSCREEN. Defendants had, at least at one point, utilized BIOSCREEN to argue that the TCE plume in the Silver Spring area had stabilized, reaching a "steady state" where it was no longer expanding in any direction. Mr. Weber's report endorsed this conclusion. In this context he wrote:

Extensive numerical modeling was performed during the RI [remedial investigation] using BIOSCREEN, a publicly available mathematical model to evaluate the contaminant transport in three dimensions. By adjusting various input variables over multiple iterations of the software model, the evaluation predicted that the plume had reached a steady state configuration from less than a year to approximately 10 years after the initial release to the Mississippian aquifer (as early as 1984 to approximately 1993). The numerical model output was consistent with observed groundwater data.

In their rebuttal report, Drs. Everett and Wells used BIOSCREEN to demonstrate that TCE concentration levels in the groundwater under Plaintiff's home measured 14 parts per billion ten years after the initial release. Defendants complain that Mr. Weber's report simply mentioned BIOSCREEN as "as a historical fact of the Superfund Site remediation process," and therefore "there is nothing about BIOSCREEN for any of Plaintiff's experts to 'rebut.'" Suggestions in Supp. (Doc. 165) at 2-3. Defendants argue that what Plaintiff is really trying to do is bolster her prima face case by inserting information in the doctors' rebuttal report which

should have been disclosed in their initial report. Defendants move to strike all references to BIOSCREEN by Drs. Everett and Wells, including their dose prediction for Plaintiff of 14 µg/L, as a sanction under Rule 37 for violating Rule 26.

The Court holds there is no Rule 26 violation here. “The function of rebuttal is to explain, repel, counteract or disprove evidence of the adverse party. The fact that testimony would have been more proper for the case-in-chief does not preclude the testimony if it is proper both in the case-in-chief and in the rebuttal.” *United States v. Luschen*, 614 F.2d 1164, 1170 (8th Cir. 1980). Similarly here, although Plaintiff could have disclosed the testimony about BIOSCREEN to use in her case-in-chief, the fact that she did not does not mean she cannot disclose it to use in rebutting Mr. Wayne’s testimony.

B. The Court declines to grant the motion to strike.

Next, Defendants argue that Dr. Wells impermissibly created Exhibits 8-A through 8-M (excluding 8-L) during the week prior to his initial deposition, but did not disclose them to Defendants until the day of his deposition, at which time Plaintiff’s counsel questioned Dr. Wells about them at length. Defendants contend Plaintiff did this again before Dr. Wells’ rebuttal deposition with respect to Exhibit R8. Defendants assert these tactics improperly prevented them from discovering all of Dr. Wells’ opinions before his depositions and prejudiced their ability to prepare for trial cross-examination, especially with respect to Exhibit R8. Defendants request the Court exclude Exhibit 8 (including subparts), Exhibit R8, and various opinions articulated by Dr. Wells in conjunction with these exhibits.

In response, Plaintiff explains in some detail how and when she disclosed these exhibits. She argues that: she timely disclosed these exhibits; they were produced in response to

Defendants' notice of deposition; and almost all of these documents are from Defendants' own collection of reports and records.

The Court declines to grant this portion of the motion at the present time. Assuming for the sake of argument that these exhibits were not timely disclosed, which is unclear from the existing record, the Court is not convinced that Defendants were prejudiced by the late disclosure. Even if the late disclosure were not harmless, it seems to the Court that a more appropriate remedy than exclusion would be for Defendants to re-depose Dr. Wells concerning these exhibits.

Accordingly, this portion of the motion is denied without prejudice. If Defendants wish to re-depose Dr. Wells, they must file a motion to do so within three weeks from the date of this Order.

C. Drs. Everett and Wells' opinions are admissible under FRE 702.

The doctors proffer six opinions: (1) FAG Bearings released large quantities of toxic chemicals into the environment from its Joplin facility, including TCE; (2) these releases have resulted in widespread groundwater and soil vapor contamination throughout the Silver Creek and Saginaw communities; (3) chlorinated solvents' environmental persistence and negative health effects were documented at least as early as the 1940s; (4) residents of Silver Creek and Saginaw were exposed through a number of exposure pathways, including ingestion, dermal contact, and inhalation from volatilization and vapor intrusion; (5) Plaintiff was exposed via all three pathways, and because these toxic chemicals permeated Silver Creek and Saginaw, Plaintiff was inevitably exposed as she went about her daily life; and (6) the EPA's assessment of exposure showing health risks greatly in excess of normally accepted thresholds for toxic was correct. Expert Report of Lorne Everett and James Wells (Doc. 170-40) at 12-13.

Defendants make three arguments concerning the admissibility of their opinions. First, Defendants contend opinions 1, 2, 4, and 6 are inadmissible because the doctors' broad opinions that everyone in Silver Creek and Saginaw was exposed to TCE is irrelevant and unhelpful to the jury. They also object to the doctors' repeated, generic assertions that FAG Bearings released "large quantities" of toxic chemicals into "the environment." They argue asserting "large quantities" were released without referencing any unit of measure or quantity is unfairly prejudicial and creates a significant risk of side issues arising. Similarly, talking about "the environment" without discussing specifically how, where, or in what way the environment was impacted is conclusory and speculative, and fails to assist the jury in understanding the evidence or in deciding an issue of fact.

Defendants' argument is unavailing. Assuming for the sake of argument that there is some merit to these objections,⁵ these objections (relevancy, unfair prejudice, confusing the issues) are the grounds of a motion in limine, not a motion to exclude under FRE 702.

Second, Defendants assert the doctors' definition of the TCE groundwater plume boundary and prediction of TCE in Plaintiff's groundwater are not scientifically valid. Similar to their objections to Plaintiff's other experts, Defendants assert Drs. Everett and Wells failed to consider all the relevant data, dismissed data contrary to their desired conclusions, and used unsound methodologies. With respect to this last point, Defendants make very specific criticisms. They complain, for example, that the doctors failed to follow the American Society for Testing and Materials guideline for predictive modeling by, in part, "failing to calibrate, verify, and minimize the non-uniqueness of their predictions." Suggestions in Supp. (Doc. 165)

⁵ At least some of these opinions are arguably relevant. For example, if *all* residents of Silver Creek were exposed to TCE through a number of exposure pathways, then it makes it more likely—indeed it logically follows—that Plaintiff, a resident of Silver Creek, was exposed to TCE through a number of exposure pathways.

at 16. These objections go to the weight the doctors' testimony should be given, not its admissibility.

Third and finally, Defendants contend the doctors are not qualified to opine as to the industry standard of care for TCE disposal in the 1970s because they admitted in their depositions that knowledge and practices concerning TCE disposal varied widely in the industry at that time. They also note the doctors' opinion is highly generalized, that they failed to identify several relevant factors (such as region, facility size, or type of operation) that might shape the standard of care, and that they did not discuss the fact that the state and federal authorities did not regulate TCE until the mid-1970s/1980s.

While the Court agrees that Drs. Everett and Wells are not qualified to opine in any depth about the industry standard of care for TCE disposal in the 1970s, they are qualified to offer a more narrow opinion. Judging from Plaintiff's responsive brief, it appears the doctors are of the opinion that a responsible company of that era "would have never poured [TCE] out the backdoor . . . or dumped it in the woods, as [FAG Bearings] said they did, directly adjacent to where folks lived and who were downhill from the FAG facility because the water would simply run down into these communities." Pl.'s Opp'n (Doc. 198) at 20. The Court finds Drs. Everett and Wells long experience studying pollution of groundwater qualifies them to deliver this narrow opinion. Accordingly, they will be permitted to offer this narrow testimony, but nothing further.

VI. Dr. Ward's testimony is admissible under FRE 702.

Dr. Ward's expert testimony concerns the calculation of Plaintiff's damages. He is a Professor Emeritus in the Department of Economics at the University of Missouri-Kansas City. He has authored peer-reviewed economic and law journal papers, book chapters, and books in

the field of forensic economics. He is the co-founder of the National Association of Forensic Economics and has been Editor or Editor Emeritus of the *Journal of Forensic Economics* since 1987.

Defendants do not challenge Dr. Ward's credentials, but rather argue his opinion is inadmissible because it is based on insufficient data, incorrect data, and poor methodology. They make five specific arguments. First, they contend that because he did not include in his report the specific growth and discount rates he used to estimate the present value of Plaintiff's future damages, his methodology is impossible to verify. Second, he used patently incorrect data on her hourly wage rate and number of hours worked, thus his opinion violates FRE 702's requirement that an expert opinion be "based on sufficient facts or data." Third, he failed to independently assess or verify information provided to him, despite obvious discrepancies and gaps in the data. Four, he failed to utilize consistent and appropriate discount rates. And, fifth and finally, he used incorrect benefit percentage and wage growth rates.

Defendants' first argument has some merit; the others have none. With respect to the first argument, the parties agree that Dr. Ward downloaded the growth and discount rates he used in his calculations from Moody's Analytics, a company that compiles data used in macroeconomic modeling. Dr. Ward provided a summary chart of the Moody's Analytics data used in his report, but he did not identify the all of the actual rates used, nor did he save this information in his notes or an electronic spreadsheet whereby Defendants could access it. When questioned about this in his deposition, Dr. Ward somewhat flippantly suggested Defendants could learn this information by buying a \$5,000 subscription to Moody's Analytics or by analyzing information available on the Federal Reserve Banks' websites to reverse engineer the data. However, Rule 26(a)(2)(B)(ii) mandates that Plaintiff disclose the facts and data

considered by Dr. Ward in forming his opinion, not that she point out where Defendants can purchase this information. The disclosure requirement includes disclosing the precise discount and growth rates Dr. Ward used, which are obviously important to his calculations.

The Court further finds that although this is a Rule 26(a) violation, the non-disclosure will be harmless so long as Dr. Ward promptly discloses this data and, if necessary, sits for a supplemental deposition on this topic. Accordingly, the Court orders Plaintiff to provide Defendants with all of the growth and discount rates used in Dr. Ward's damages calculations with twenty-one days from the date of this Order. If, after receiving this data, Defendants believe they need to take a supplemental deposition of Dr. Ward to understand the calculations, they may file a motion to do so.

As for Defendants' remaining arguments, they go to the weight Dr. Ward's testimony should be given, not its admissibility. For example, one of their arguments is that Dr. Ward did not use "appropriate" discount rates because he did not use discount rates that were higher than present interest rates. Suggestions in Supp. (Doc. 169) at 9-10. *The Reference Manual on Scientific Evidence* counsels that "one should use a real interest rate as the discount rate," which is what Dr. Ward did. Mark A. Allen et al., *Reference Guide on Economic Damages*, in *Reference Manual on Scientific Evidence*, 425, 453 (Fed. Judicial Ctr. ed., 3d ed. 2011). Defendants cite no authority, nor can the Court find any, suggesting that using present interest rates to determine the discount rate is an unacceptable methodology. It is certainly not grounds to exclude Dr. Ward's testimony under FRE 702.

Accordingly, the Court holds Plaintiff has shown Dr. Ward's testimony is admissible under FRE 702.

Conclusion

For the reasons above, each of Defendants' motions to exclude Plaintiff's experts (Docs. 156, 158, 160, 162, 164, 168) is DENIED. Plaintiff is ORDERED to supplement Dr. Ward's expert report.

IT IS SO ORDERED.

Date: September 29, 2015

/s/ Greg Kays
GREG KAYS, CHIEF JUDGE
UNITED STATES DISTRICT COURT